

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 March 2001 (08.03.2001)

PCT

(10) International Publication Number
WO 01/15575 A1

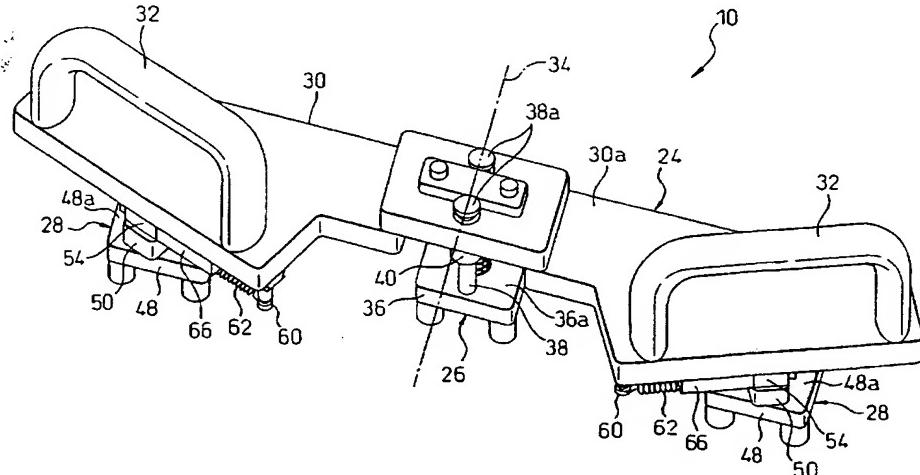
- (51) International Patent Classification⁷: **A47C 31/02**
- (21) International Application Number: **PCT/US00/23261**
- (22) International Filing Date: 24 August 2000 (24.08.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
11/243312 30 August 1999 (30.08.1999) JP
- (71) Applicant (for all designated States except US): **3M INNOVATIVE PROPERTIES COMPANY [US/US]; 3M Center, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).**
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **SAWAJIRI, Osamu [JP/JP]; Kamitsuruma 784, Sagamihara-city, Kanagawa 228-0802 (JP).**
- (74) Agents: **KNECHT, Harold C, III et al.; Office of Intellectual Property Counsel, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).**
- (81) Designated States (national): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR (utility model), KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FASTENER INSTALLING DEVICE AND FASTENER MEMBER



(57) Abstract: A fastener installing device (10, 120) that permits fastener members to be quickly and easily installed in respective holding parts (14) located within a mold for a molded body. The fastener installing device (10, 120) includes a body (24, 122) capable of being operated by a hand and three attaching sections (26, 28) provided on the body (24). During a fastener installing operation, the attaching sections (26, 28) are individually engaged with the plurality of fastener members, and act to push the respective bases and engaging elements of the fastener members into the respective grooves of the corresponding holding parts. The first attaching section (26) can shift substantially in the vertical direction in relation to the bottom surface of the support frame (30), when the body (24, 122) is transferred along the holding parts. Each of a pair of second attaching sections (28) can shift substantially in the horizontal direction in relation to the bottom surface of a support frame (30) and also can rotate about an axis extending substantially in the vertical direction, when the body (24, 122) is transferred along the holding parts.

WO 01/15575 A1